National Aeronautics and Space Administration

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Research and Development Will Keep NASA on Cutting Edge

Chief Technologist Visits

Chief Technologist Dr. Bobby Braun visited Glenn on Aug. 25 to learn more about the center's technological capabilities and share his plan to revitalize NASA's research and technology development programs.

"For our agency to remain on the cutting edge, we need a healthy research and development aspect of our program," he said during his visit. "We need to bring up the research and technology competency to a point where it is visible."

Braun, NASA's principal advisor and advocate on matters concerning agency-wide technology policy and programs, met with the Director's Strategic Management Team for a roundtable discussion. Center Director Ray Lugo and Deputy Director for Research and Technology Dr. George Schmidt, who serves as Glenn's acting chief technologist, escorted Braun to several facilities where he received updates on a wide range of technology efforts.

Continued on page 2

C-2010-3994 Photo by Marvin Smith

Dr. Braun, left, is briefed on several advanced plasma thruster concepts by Dr. Schmidt, Mike Patterson, Glenn's propulsion senior technologist, and Dr. John Foster (Univ. of Michigan).

Glenn Tests Alternative Nontoxic Fuel for Rocket Engine

Focus on Green Technology

NASA Glenn has completed a series of tests on a new rocket engine that will use a nontoxic propellant combination.

The engine, designed by Aerojet, Sacramento, Calif., uses methane and oxygen as propellants. These propellants are cryogenic liquids, or as cold as –238°F, and are being investigated as a nontoxic alternative to more commonly used hypergolic fuels.

C-2009-1939 Photo by Michelle Murphy

Left: Exterior of the Altitude Combustion Stand where tests occurred.

Hypergolic fuels ignite easily and extreme care must be taken because the propellants can be highly toxic. The technology development's objective is to provide risk reduction data for this novel nontoxic propellant combination for this class of engines.

"The ability to efficiently conduct altitude testing with cryogenic propellants in conditions that mimic space is essential as NASA develops missions for future space exploration," said Mark Klem, manager for the Propulsion and Cryogenic Advanced Development project at Glenn. "The benefits of this technology make it advantageous for missions that require long-duration storage of propellants in space."

For information on the tests, visit http://www.nasa.gov/centers/glenn/news/pressrel/2010/10-049_green.html.

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Straight *from the* Director

Mapping Our Course into the Future

Center Director Lugo

Since I arrived at NASA Glenn in 2007, I have consistently heard concerns from the workforce that senior management is not doing enough to assure the future viability of the center. I have heard this sentiment coming from everyone, including employees and their supervisors. In addition, there are a number of managers who have expressed a similar concern.

I want to assure you that your senior management team is mindful of the center's future, and is actively engaged in a very robust approach to securing new work. I could write for hours about the hands-on activities that are ongoing at Glenn. In fact, some of you have been active participants in these activities and may not even be aware of it. Our approach includes internal advocacy for Aeronautics and Space Research and Development assignments, as well as external efforts with other government agencies and commercial entities. It is important that you allow the senior management team to lead this effort, and when you are asked to support these efforts, support them with enthusiasm.

The reason I mention our strategic planning efforts is because I am getting ready to release the draft of a revised GRC Strategic Action Plan for review and comment. I want every employee to read the plan and ask questions to make sure the plan is well written and understandable. I want you to "see" how you contribute to the overall center and agency mission.

If you have a question or comment, make sure that you send it forward, so we can consider your input in the plan. If you feel something in the plan is unclear, or needs to be changed, I ask that you provide a proposed revision with a statement explaining the change and your reasons for the change. This is very important because I really want to understand your perspective and your logic, so that if a change is made to the plan, I can work with the senior management team to develop an approach to implement your changes.

I plan to have the draft of the Strategic Action Plan in your hands shortly, and expect to have a finished product by the end of the calendar year. It is important to have a good plan, or a plan we can support and understand, so that we can work together to move the center and the agency forward.

I look forward to hearing your feedback.

Chief Technologist Will Boost Programs

Continued from page 1

In an all hands address to employees, Braun shared his vision for reenergizing NASA as a national driver in research and technology development. Braun said he is developing a plan to boost programs that will deliver results and greatly benefit space flight hardware development and mission operations across the agency. He touted Glenn's abilities and stressed the vital role the center will have in accomplishing the agency's goals.

"When I think of NASA, I think of three core competencies: research and technology development, space flight hardware development and mission operations," Braun said. "None is more important than the others but all three are critical for a healthy NASA."

Braun also participated in a media roundtable to discuss NASA's innovation and technology plans and the role that Glenn will play in future aeronautics and space exploration programs.

—BY DOREEN B. ZUDELL

C-2010-4016 Photo by Michelle Murphy

C-2010-4024 Photo by Michelle Murphy

Pictured, clockwise: Dr. Braun spoke with local media on Glenn's role in NASA's technology plans. • Braun talked with employees at an All Hands meeting. • Braun was briefed on an Office of Chief Technologist-funded study led by Glenn. The study is evaluating the potential of using beamed energy for launch and in-space propulsion applications.

C-2010-3978 Photo by Marvin Smith

NASA Celebrates Scouts Centennial

Over the past several months, NASA has participated in a number of activities in support of this year's centennial celebration for the Boy Scouts of America (BSA). Thousands of NASA employees have been involved in Scouting, either in their youth or as adult volunteers, including more than half of all U.S. astronauts.

Local Outreach

In May, Glenn supported the Greater Cleveland Council's Centennial Camporee at the Cuyahoga County Fairgrounds in Berea. Astronaut Mike Foreman spoke to Scouts and signed autographs, while Scout leaders and alumni from NASA Glenn staffed a large interactive NASA exhibit.

National Outreach

Glenn employees were instrumental in setting up a major NASA presence in the Technology Quest at the National Scout Jamboree at Fort A.P. Hill, Va., from July 26 to Aug. 4. Technology Quest featured innovative hands-on STEM-related learning activities designed to excite and engage the nearly 45,000 Scouts, leaders and staff. Glenn personnel teamed with staff from other NASA centers to provide energized demonstrations and talk with visitors as they browsed the NASA tent and two mobile exhibits, including Glenn's Journey to Tomorrow trailer.

The Jamboree was a great opportunity for Scouts to work on unusual badges where it can be difficult to find experts who have the knowledge about the topic. Scouts can also earn merit badges in space exploration and aviation, which tie directly to NASA missions. Scouts and leaders received a replica of the NASA/Jamboree patch created for the BSA centennial and flown on the STS-131 mission.

Lessons for Future Leaders

The highest youth award in the BSA is the rank of Eagle Scout, distinguished by a Scout's example of leadership in performing a service or project to the community. The national average for earning an Eagle Scout badge is only 4 percent. Glenn's onsite child development center, Lewis Little Folks (LLF), is the beneficiary of two service projects by local troops.

Former LLF student, Teddy Reehorst, son of Andy (Icing Branch) and Sandy (Advanced Flight Projects Office), has applied his woodworking skills in pursuit of the Eagle Scout rank. Reehorst led 10 members of Troop 701 in Strongsville, Ohio, in building six birdfeeders and posting one outside the window of each LLF classroom. He also recently delivered an attractive reception hall bench designed and built in memory of former LLF Assistant Director Carmella Genaro.

Photo by Mack Thomas

Adam Woodruff, a member of Troop 201 in Olmsted Falls, Ohio, also used his woodworking skills to design two sets of reading benches and much-needed cubbies for the children to store their personal items in the two LLF kindergarten classrooms. Woodruff expects to complete his projects by November.

Photo by Woodruff Family

Top: Glenn's Dennis Stocker at Jamboree. Center: Adam Woodruff builds cubbies. Bottom: Teddy Reehorst, foreground, and his father, Andy, deliver bench to LLF Director Tiffany Cornell.

Photo by S. Jenise Veris

Glenn is proud to have more than 40 Eagle Scouts among its workforce. They often attribute experiences and lessons learned in scouting to their ability to achieve their goals and serve their country—a tradition we all can share.

—BY S. JENISE VERIS

Astronaut Candidates Visit

The 2009 astronaut candidate class visited various facilities at NASA's Glenn Research Center-—both Lewis Field and Plum Brook Station—on September 7 and 8. The visit provided the candidates the opportunity to learn about Glenn's world-class capabilities and the people behind the work. They were able to gain a greater appreciation for Glenn's contributions to NASA in general and human spaceflight in particular.

C-2010-4512

C-2010-4493 Photos by Marvin Smith

Above: Center Director Ray Lugo, far right, and members of the Director's Strategic Management Team hosted a picnic for the candidates at the Guerin Management Center. Left: Candidates toured the Vision Laboratory in building 110.

A Soldier's Journey

Shoshana Johnson, the first female POW of Operation Iraqi Freedom and first black female POW in U.S. war history, was guest speaker for this year's Prisoner of War/Missing in Action (POW/MIA) Recognition Ceremony, Sept. 17, sponsored by Glenn's Veterans Awareness Committee (VAC). Johnson spoke frankly and answered questions on the role of family, faith and ultimately the bravery of fellow soldiers in her ability to survive the ordeal. The program also included several other patriot selections including the poignant Missing Man Table Ceremony performed by the Lorain High School Army JROTC. Johnson, left, accepts a thank you gift presented by Center Director Ray Lugo and VAC member Gloria Richards.

C-2010-4369 Photo by Marvin Smith

C-2010-4439 Photo by Bridget Caswell

Leaders Empowering Others

Leaders Empowering Career Success, the first in a new series of career development programs, was held on Sept. 15 at the Ohio Aerospace Institute. The day included a panel discussion with distinguished members of NASA's Senior Executive Service Corps, "speed mentoring" and breakout sessions. NASA Glenn's Diversity Management Office, the African Heritage Advisory Group and the Black Women's Advisory Group sponsored the event that featured, pictured left to right, moderator Dr. Julian Earls, former center director, and panelists, Christine Darden, Langley; Robyn Gordon, Glenn; Christyl Johnson, Headquarters; and Felicia Jones-Selden, Goddard.

Lessons Learned on Shuttle

Matt Melis, a researcher for Glenn's Ballistic Impact Laboratory, was the featured speaker for the first "Friends and Family Night," presented by Glenn's Lessons Learned Committee and Alphaport, Inc. on Aug. 18 at the Ohio Aerospace Institute. Melis shared his unique experiences and knowledge of the space shuttle for the event, which was initiated to promote continuing education for people of all ages in STEM-related areas. Pictured, right: Melis autographs his poster and hands out a new DVD on shuttle. To learn more about Glenn's Lessons Learned Committee and future outreach events, e-mail chairman Ralph.J.Zerick@nasa.gov.

Photo by Jim Nolan

Photo by Doreen Zudell

1-Mile Walk and Farmer's Market

Employees were invited to the President's Fitness Challenge kickoff on September 8 to participate in a 1-mile walk around Glenn's track near the Fitness Center and Picnic Grounds. With over 425 in attendance, music was provided by Karizma, whose drummer is Glenn's own Medical Director Dr. John Kocka. The highlight of the event was a Farmer's Market featuring Ohio-grown produce. Pictured, left, employees purchase fresh produce from a local vendor during the event.

Local Reunion

More than 50 NACA, Lewis and Glenn retirees and guests gathered to reminisce at a NASA Reunion hosted at The Gardens at Westlake and cosponsored by Infinity Home Health Services, on Aug. 20. A red-carpet welcome, hors d'oeuvres (highlighted by a space shuttle ice sculpture), entertainment and parting gifts, including their framed picture and a chocolate-filled champagne glass, made it a memorable evening. NASA retirees, left to right: Joanne Hartmann, Maggie Benser and Jean Chapman enjoy refreshments and reminiscing at the reunion.

Photo by Barb Bartlome

Plum Brook Reactor Decommissioning Update

Demolition Recycling and Environmental Monitoring

With more than a decade of preparation and work on the NASA Plum Brook Reactor Facility (PBRF) Decommissioning Project, recent progress can best be expressed as the "proof is in the package." To date, six of 17 Final Status Survey (FSS) packages have been submitted to the U.S. Nuclear Regulatory Commission. Each details the results of NASA's methodology to meet mandated project cleanup levels. The packages covered five structures demolished between May and July, and one scheduled for this fall. Metal from the buildings was made available for recycling, and concrete debris was reused as fill, saving on disposal costs.

Photos by FOCUS Group

Before: Viewing the Services Equipment Building (SEB) from the former site of the Fan House, two of the five structures demolished.

After: Excavating equipment, fitted with heavy shears and hammers, surgically demolished the SEB in July.

No Environmental Impact from Decommissioning

The Annual Monitoring Report for air, surface water, groundwater and sediment throughout PBRF shows decommissioning has had no effect on the environment. Air samples are well below Project Specific Action Levels (safety limits). Water and sediment are clean and monitored at six locations. Although there was some fluctuation from monthly groundwater sampling at 11 wells, Decommissioning Program Manager Keith Peecook relates the changes to naturally occurring background radiation due to seasonal variations. Monitoring will continue until the end of FSS work.

Plum Brook Off-Site Cleanup Completed

NASA has completed the spot cleanup and sampling of some off-site areas along Plum Brook. An extensive sampling program was initiated in August 2005, after discovering very low levels of cesium from former reactor operations in some off-site soil. Careful analysis of more than 2,100 samples since 2005 showed no risk to public health. "We've said from the outset that NASA's priority is the safety of the workers, community and environment," Peecook stated. "It's a commitment we demonstrate daily and will continue."

For more information on the project, visit www.grc.nasa.gov/WWW/pbrf.

—BY S. JENISE VERIS

Encouraging Children to "Dream Big!"

Billboards Promote STEM-Related Careers

Have you seen them yet? As a way of encouraging children to pursue science, technology, engineering and mathematics (STEM) careers, NASA Glenn has begun running indoor and outdoor promotional displays in the Cleveland and Akron area.

Now through the end of July 2011, the Dream Big promotional message is displayed on arrival escalators and 7-foot scrollers inside Cleveland Hopkins International Airport and the Akron-Canton Airport, respectively.

Designs by Lisa Liuzzo

This billboard is located inside the Akron-Canton and Cleveland airports.

Outdoor billboards carrying this message are located on:

- Route 237 north of Snow Road in Cleveland, running now through May 17, 2011.
- I-76 east of Grant in Akron, starting in August 2010—with a short break from September to November—and then from Nov. 1 through mid-Aug. 2011.

Outside billboard near both airports.

In addition to the indoor and outdoor displays, very soon you'll be able to view the new Dream Big message driving around Glenn on a motor pool van.

—BY KELLY R. DIFRANCESCO

People

Five Honored for Space Flight Contributions

The Space Flight Awareness award is one of the most prestigious awards available to employees of NASA, the Department of Defense and industry recognizing outstanding contributions and dedication to quality work and flight safety. Five Glenn honorees were rewarded during the STS-132 launch festivities. They include:

Amy Bower, Safety, Health and Environmental Division (SHED), for leadership in the SHED Plum Brook Team implementing safety requirements through a challenging development and build of the Space Environmental Test and Vibration Test Capability.

Terry Ferrier, Fabrication and Instrumentation Branch, for hard work, talent and dedication to the development of numerous microgravity research and Ares 1-X Upper Stage Simulator projects in the area of instrumentation, implementation and planning.

Dr. Robert Green, Fluid Physics and Transport Branch, for technical support consulting on installation/modifications to the ISS power system, as well as supporting the highly successful Capillary Flow Experiment.

Glenn SFA honorees and guests. NASA KSC

Konstantinos Martzaklis, Space Operations Project Office, for leadership in implementing technology projects to enhance performance and reliability of NASA space communications systems, including the Space Communication and Navigation (SCAN) program and the Communications Navigation and Networking reconfigurable Testbed (CoNNeCT).

Denise Varga, Flight Software Engineering Branch, for contributions to the development of flight software used for manned space flight and for helping to strengthen and improve the processes for development of software across the agency.

Patent on Growth of Carbon Nanotubes Issued

Dr. Hepp

Dr. Harris

U.S. Patent 7,763,230 was awarded July 27 for "Process and Apparatus Utilizing Mixed Ligand Organometallic Catalysts for In Situ Growth of High Purity, Low Defect Density Carbon Nanotubes." The patent is assigned to Nanotech Innovations (NI), LLC, Oberlin, Ohio; Aloysius F. Hepp, Bio Science and Technology Branch and Jerry D. Harris (Northwest Nazarene University) are the inventors. The process uses NASA-developed chemical vapor deposition (CVD) technology and "a floating zone catalyst" to greatly enhance the growth and quality of multi-walled carbon nanotubes (MWNT) applicable for coatings, automotive parts and electronic components. NI, LLC has integrated the process into a portable instrument for more affordable nanotube production for research and development. NI, LLC, funded the technology transfer, application and commercialization of this process. The NASA Glenn Nanotechnology Program funded the original work.

Lyons, "Woman of Note"

Dr. Lyons, left, with Kathleen Seitz Watson, from CBIZ MHM, LLC.

Crain's Cleveland Business recognized Dr. Valerie Lyons, chief of the Power and In-Space Propulsion Division, as a member of the "Class of 2010 Women of Note." Lyons was one of 12 female business and professional leaders profiled for their distinguished achievements and contributions to Northeast Ohio in *Crain's* July 19 issue, and honored during an awards luncheon sponsored by CBIZ, MHM, LLC, at Landerhaven, July 22.

Zhu Earns ACerS Fellow

Dr. Zhu

The American Ceramic Society (ACerS) has selected Dr. Dongming Zhu as a Fellow in the society. The rank of "Fellow" is an honor reserved for ACerS members who are distinguished mid-career scientists, engineers and business leaders specializing in ceramic and glass materials. Zhu will be recognized at the ACerS Honors and Awards Banquet during the society's 112th Annual Meeting on Oct. 18 in Houston.

Promotions

Dr. Joe Grady has been selected chief of the Ceramics Branch. Grady previously served as the Branch's acting chief over the past year.

Lisa Ferenc has been selected project control specialist for the Environmental Responsible Aircraft Project in the Project Liaison and Integration Office. Ferenc previously served as a project support assistant in the organization.

In Memory

Thomas A. Monahan, 70, who retired in 2004 with 31 years of NASA service and 4 years in the Air Force, died Nov. 8. Monahan was a mechanical engineering technician who served the majority of his career in the Test Installation Division supporting various branch projects. Monahan earned multiple Suggestion Awards, as well as group achievement and performance awards. He retired from the Space Combustion and Microgravity Technology Branch.

Stanley Jopek, 77, who retired in 1991 with 29 years of NASA service, died March 13. Jopek was a U.S. Navy veteran, who began his career as an experimental metal modelmaker in the NASA Apprentice Program. Jopek spent his entire career in the Fabrication Support Division, where he supported a variety of programs and experiments, including the National Aerospace Plane program Glovebox and Surface Tension Driven Convection Experiment microgravity experiments. He also co-authored a Technical Report on Carbon Coating of Copper by Arc-Discharge Pyrolysis (1988).

David W. Vincent, who retired in 1995 with 32 years of NASA service, died May 3. Prior to his retirement, Vincent served as the Icing Research Tunnel Facility manager. Vincent worked in several branches over his career and received numerous special act and performance awards, including a 1988 Group Award for the Advanced Gas Turbine Project Team and 1991 Group Award for the Air Force/NASA Low Power Ice Protection Team. He took an active role in promoting and participating in center activities as a member of the Speaker's Bureau and Lewis Social Activities Committee. He also served on the AIAA Council for the Cleveland/Akron region. After retiring, Vincent briefly consulted on construction of an icing research facility for the Italian government.

Dr. Arthur G. Hansen, 85, who retired in 1959 with ten years of NASA service, died July 5. A prolific scientist, Hansen served primarily in the Compressor and Turbine Division, where he authored/co-authored numerous NASA Technical Reports on flow-visualization techniques and modeling for the analyses of turbomachinery. Hansen dedicated the last two years of his NASA tenure working first in the Nuclear Reaction Division designing the Plum Brook Reactor; and next in the Space Project Group, while completing his doctorate at Case Institute. Hansen left NASA to enter academia. He taught locally at John Carroll University and Baldwin Wallace College before becoming president of the Georgia Technical Institute and later, president of Purdue University.

Dr. Hansen

Beatrice A. Zigon, 77, who retired from NASA in 1987, died July 7. Zigon served in the Procurement Division prior to her retirement. She previously served in the Personnel Management Assistant Branch.

Ojars V. Klans, 79, who retired in 2005 with 45 years of NASA service plus 4 years in the military, died Aug. 18. Klans was a mechanical engineering technician who served his entire career as a member of the Test Installations Division supporting various sections and projects within the organization. Klans earned numerous merit and sustained superior performance awards during his career at the center.

Klans

DEADLINES

News items and brief announcements for publication in the November issue is noon, Oct. 22. Larger articles require at least one month notice.

http://aerospacefrontiers.grc.nasa.gov

Hermes Award 2009-2010

2010 APEX® AWARDS FOR PUBLICATION EXCELLENCE

Aiding Cancer Research

Team NASA was one of 521 teams (15,956 total participants) that participated in the 5K Walk/Run launched at Cleveland State University's Wolstein Center, Sept. 11, benefiting the Susan G. Komen Northeast Ohio "Race for the Cure." Glenn's Developing Professional Club organized the 18-member Team NASA, which helped raise $1,501 for the fight against breast cancer.

Calendar

IFPTE LOCAL 28, LESA MEETING: LESA will hold its next membership meeting on Wednesday, Oct. 13 at noon in the Small Dining Room of the Employee Center, building 15.

AFGE MEETING: AFGE LOCAL 2182 will hold its next membership meeting on Wednesday, Nov.3 at 5 p.m. at Denny's Restaurant, 25912 Lorain Road, North Olmsted.

BROWNS AND CAVS TICKETS ON SALE: Astronaut Mike Good will make a presentation at the Cleveland Cavaliers game on Saturday, Nov. 13 and the Cleveland Browns game on Sunday, Nov. 14. NASA exhibits and activities will precede each game. Discount tickets are available for NASA employees, contractors and retirees. Look for flyers on Today@Glenn or at the NASA Exchange. Contact defelice@nasa.gov.

WOMEN'S RETIREE LUNCHEON: The next NASA Retired Women's Luncheon will be Thursday, Nov. 18 at Pier W, 12700 Lake Road, Cleveland. at noon. Please notify Gerry Ziemba, 330-273-4850, for reservations.

Tutors Needed

The Cleveland Federal Executive Board is looking for federal employees/retirees to help with tutoring in the Cleveland schools.

Contact Craig Healey: 216–791-3800, ext. 4168, or visit www.cleveland.feb.gov/tutor

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Three-Day Summit Focused on Sustainability

Green Technology, Products, Services

The Outsourcing Desktop Initiative for NASA (ODIN) and the Safety, Health, and Environmental Division (SHED) Pollution Prevention (P2) Team hosted a Sustainability Summit from Sept. 14 to 16 to showcase "green" information technology (IT) products and systems, as well as topics pertaining to environmental sustainability. On Sept. 14, ODIN's Technology Showcase featured "Green IT Technology Innovation Stations." Technology vendors provided products made from recycled materials and stressed electronics stewardship. On Sept. 15, employees enjoyed hands-on demonstrations and breakout sessions on such topics as composting, "Earth Ship" sustainable houses, Sustainability 101 and environmentally friendly computing and office supplies. The summit concluded on Sept. 16 with the center's America Recycles Day offering vendors and demonstrations related to environmental sustainability, recycling and green purchasing.

Top, clockwise: P2 team members distributed "Everything Green Living" books. • Vendor representatives talked with employees about recycling products and methods such as this one on recycling polymers. • Records Management Office staff shared information on retaining and recycling records. • ODIN's Technology Showcase featured a variety of vendors and provided green technology options. • ODIN representatives supplied refillable/reusable green water bottles to encourage refilling instead of buying bottled water. • Representatives from Cuyahoga County Solid Waste District showcased composting products and methods.

Photos by Eli Abumeri, Dawne Stephens and Doreen Zudell